IBP INC (PWS 4010163)
SOURCE WATER ASSESSMENT FINAL REPORT

January 24, 2002

State of Idaho
Department of Environmental Quality

Executive Summary

Under the Safe Drinking Water Act Amendments of 1996, all states are required by the U.S. Environmental Protection Agency to assess every source of public drinking water for its relative sensitivity to contaminants regulated by the Act. This assessment is based on a land use inventory of the designated assessment area and sensitivity factors associated with the wells and aquifer characteristics.

This report, *Source Water Assessment for IBP Inc, Boise, Idaho*, describes the public drinking water system, the boundaries of the zones of water contribution, and the associated potential contaminant sources located within these boundaries. This assessment should be used as a planning tool, taken into account with local knowledge and concerns, to develop and implement appropriate protection measures for this source. **The results should <u>not be</u> used as an absolute measure of risk and they should <u>not be</u> used to undermine public confidence in the water system.**

The IBP Inc drinking water system consists of three wells. Well #1 West rated moderate susceptibility for inorganic contaminants, volatile organic contaminants, and microbial contaminants, and automatically high for synthetic organic contaminants. Well #2 East has been manifolded together with Well #1 West, and has overall susceptibility rating of high for inorganic contaminants, moderate for volatile organic contaminants, and automatically high for synthetic organic contaminants and microbial contaminants. The Farm Well #3 is a backup source that rated moderate susceptibility to all classes of contaminants. The potential contaminant sources are the surrounding wastewater land application sites related to the business at hand. Well logs provided by IBP Inc for Wells #1 and #3 allowed for complete assessment of both hydrologic sensitivity and system construction. No well log was available for Well #2 East, leading to slightly higher scores.

None of the wells has recorded the presence of volatile organic contamination during any water chemistry tests. The manifold of Well #1 West and Well #2 East detected the synthetic organic contaminant dinoseb in September 1993. The inorganic contaminants fluoride, barium, and selenium have been detected, but at levels below the current Maximum Contaminant Levels (MCLs) set by the Environmental Protection Agency. Nitrate concentrations for Well #3 Farm have been consistently below 2.0 parts per million (ppm). Nitrate concentrations for the manifold have been consistently below 2.4 ppm. The MCL for nitrate is 10 ppm. Total coliform bacteria were detected in Well #2 East in September 1993 and July 1996. Though the drinking water system is not currently in violation of current regulations, the IBP Inc should be aware that the potential for contamination still exists.

This assessment should be used as a basis for determining appropriate new protection measures or re-evaluating existing protection efforts. No matter what ranking a source receives, protection is always important. Whether the source is currently located in a “pristine” area or an area with numerous industrial and/or agricultural land uses that require surveillance, the way to ensure good water quality in the future is to act now to protect valuable water supply resources. If the system should need to expand in the future, new well sites should be located in areas with as few potential sources of contamination as possible, and the site should be reserved and protected for this specific use.

For IBP Inc, drinking water protection activities should first focus on maintaining the wellhead protection practices indicated as being well kept outlined in the most recent sanitary survey (IDHW, 1999). Additionally, there should be a focus on implementation of practices aimed at reducing the

leaching of chemicals from the wastewater land application sites within the designated source water areas. Application of herbicides, pesticides, or other chemicals are not allowed within 50 feet of any public water well (IDAPA 58.01.08.550). Much of the designated protection areas are outside the direct jurisdiction of IBP Inc, making collaboration and partnerships with state and local agencies and industry groups critical to the success of drinking water protection. All wells should maintain sanitary standards regarding wellhead protection. Should microbial contamination become a problem, appropriate disinfection practices would need to be implemented.

Due to the time involved with the movement of ground water, drinking water protection activities should be aimed at long-term management strategies even though these strategies may not yield results in the near term. A strong public education program should be a primary focus of any drinking water protection plan as the delineations contain some urban and residential land uses. Public education topics could include proper lawn and garden care practices, household hazardous waste disposal methods, proper care and maintenance of septic systems, and the importance of water conservation to name but a few. There are multiple resources available to help communities implement protection programs, including the Drinking Water Academy of the U.S. Environmental Protection Agency. Drinking water protection activities for agriculture should be coordinated with the Idaho State Department of Agriculture, the Soil Conservation Commission, the local Soil Conservation District, and the Natural Resources Conservation Service.

A community must incorporate a variety of strategies in order to develop a comprehensive drinking water protection plan, be they regulatory in nature (i.e. zoning, permitting) or non-regulatory in nature (i.e. good housekeeping, public education, specific best management practices). For assistance in developing protection strategies please contact the Boise Regional Office of the Idaho Department of Environmental Quality or the Idaho Rural Water Association.

SOURCE WATER ASSESSMENT FOR IBP INC, BOISE, IDAHO

Section 1. Introduction - Basis for Assessment

The following sections contain information necessary to understand how and why this assessment was conducted. **It is important to review this information to understand what the ranking of this assessment means.** Maps showing the delineated source water assessment area and the inventory of significant potential sources of contamination identified within that area are included. The lists of significant potential contaminant source categories and their rankings used to develop the assessment are also included.

Background

Under the Safe Drinking Water Act Amendments of 1996, all states are required by the U.S. Environmental Protection Agency (EPA) to assess every source of public drinking water for its relative susceptibility to contaminants regulated by the Safe Drinking Water Act. This assessment is based on a land use inventory of the delineated assessment area and sensitivity factors associated with the wells and aquifer characteristics.

Level of Accuracy and Purpose of the Assessment

Since there are over 2,900 public water sources in Idaho, there is limited time and resources to accomplish the assessments. All assessments must be completed by May of 2003. An in-depth, site-specific investigation of each significant potential source of contamination is not possible. **Therefore, this assessment should be used as a planning tool, taken into account with local knowledge and concerns, to develop and implement appropriate protection measures for this source. The results should <u>not be</u> used as an absolute measure of risk and they should <u>not be</u> used to undermine public confidence in the water system.**

The ultimate goal of the assessment is to provide data to local communities to develop a protection strategy for their drinking water supply system. The Idaho Department of Environmental Quality (DEQ) recognizes that pollution prevention activities generally require less time and money to implement than treatment of a public water supply system once it has been contaminated. DEQ encourages communities to balance resource protection with economic growth and development. The decision as to the amount and types of information necessary to develop a drinking water protection program should be determined by the local community based on its own needs and limitations. Wellhead or drinking water protection is one facet of a comprehensive growth plan, and it can complement ongoing local planning efforts.

Section 2. Conducting the Assessment

General Description of the Source Water Quality

The public drinking water system for the IBP Inc is comprised of three ground water wells that serve approximately 300 people through one connection. The wells are located in Ada County, south of Barker Road near South Cole Road, southeast of the City of Boise (Figure 1).

Though there are no current significant water chemistry problems in the ground water, there have been detections in the tested well water of the inorganic contaminants (IOCs) fluoride, barium, selenium, and nitrate at levels below the current maximum contaminant levels (MCLs). Total coliform bacteria were detected in Well #2 East in September 1993 and July 1996. The synthetic organic contaminant (SOC) dinoseb was detected in the manifold of Wells #1 West and #2 East in September 1993. No volatile organic contaminants (VOCs) have been detected in the well water.

Defining the Zones of Contribution – Delineation

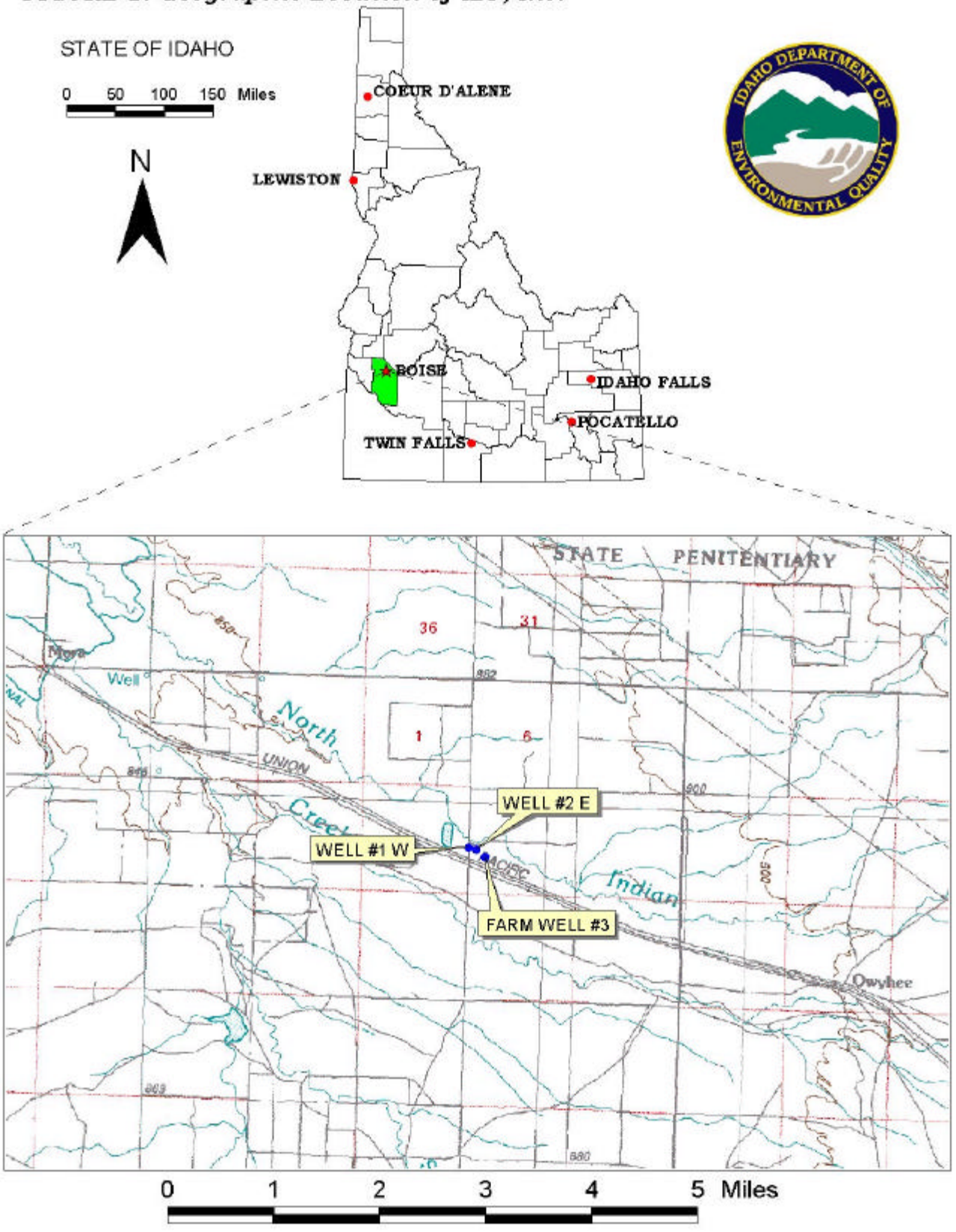
The delineation process establishes the physical area around a well that will become the focal point of the assessment. The process includes mapping the boundaries of the zone of contribution into time-of-travel (TOT) zones (zones indicating the number of years necessary for a particle of water to reach a well) for water in the aquifer. DEQ contracted with BARR Engineering to perform the delineations using a combination of MODFLOW and a refined analytical element computer model approved by the EPA in determining the 3-year (Zone 1B), 6-year (Zone 2), and 10-year (Zone 3) TOT for water associated with the Boise Valley aquifer in the vicinity of the IBP Inc. The computer models used site specific data, assimilated by BARR Engineering from a variety of sources including the available IBP Inc well logs, other local area well logs, and Ralston and Chapman (1970) (detailed below).

The ground water system underlying the western part of the area is recharged with water from the Boise River. This recharge results from leakage from the many irrigation canals, laterals, and ditches that cross the area and from downward percolation of applied irrigation water. Leakage directly from the channel of the Boise River between Lucky Peak and Barber Dams also recharges the ground water system.

The lower sand and gravel unit underlies the western portion of the area, south of Kuna. It consists of lenticular beds of poorly sorted gravel and sand with lesser amounts of silt and clay. The sediments were derived from the mountains to the north and deposited on a rolling topography by the ancient Boise River and tributary stream. These sediments are believed to provide hydraulic connection for some ground water recharge from the present Boise River. Local artesian conditions are present.

The basalt unit consists of a thick sequence of lava flows deposited from a chain of volcanoes, which paralleled the Snake River during Middle Pleistocene time. These flows filled the then existing valleys and low areas to approximately 3,000 feet elevation. The contacts between flows are vesicular or porous and broken. Cinder beds and clay lenses were deposited between many flows. The thickness of the unit varies from as little of 40 feet to as much as 600 feet. Wells commonly yield more than 2,000 gallons per minute (gpm).

FIGURE 1. Geographic Location of IBP, Inc.



Torrential streams issuing from the mountains to the north during Upper Pleistocene time deposited the upper sand and gravel unit. The unit ranges from silt to cobble-size granite, with small amounts of basalt and metamorphic rocks. Individual beds are very discontinuous. The thickness of the unit varies widely, but is believed to be over 900 feet. The well production from this aquifer varies from 1,000 to 3,000 gpm.

Recharge to the aquifers is mainly derived from the Boise River and the New York Canal and associated irrigation. It is not believed that a significant quantity of recharge is derived from precipitation either on the mountainous regions or the plateau. Regional ground water flow is from northeast to southwest.

The delineated source water assessment areas for the IBP Inc can best be described as an north-eastward trending corridors approximately 4 miles long and ¼ mile wide (Figures 2, 3, 4). The actual data used by BARR Engineering in determining the source water assessment delineation areas are available from DEQ upon request.

Identifying Potential Sources of Contamination

A potential source of contamination is defined as any facility or activity that stores, uses, or produces, as a product or by-product, the contaminants regulated under the Safe Drinking Water Act and has a sufficient likelihood of releasing such contaminants at levels that could pose a concern relative to drinking water sources. The goal of the inventory process is to locate and describe those facilities, land uses, and environmental conditions that are potential sources of groundwater contamination. The locations of potential sources of contamination within the delineation areas were obtained by field surveys conducted by DEQ and from available databases.

Land use within the immediate area of the IBP Inc wellheads consists of animal rendering processes, while the surrounding area is predominantly wastewater land application sites, irrigated agriculture, and urban to the northeast.

It is important to understand that a release may never occur from a potential source of contamination provided they are using best management practices. Many potential sources of contamination are regulated at the federal level, state level, or both to reduce the risk of release. Therefore, when a business, facility, or property is identified as a potential contaminant source, this should not be interpreted to mean that this business, facility, or property is in violation of any local, state, or federal environmental law or regulation. What it does mean is that the <u>potential</u> for contamination exists due to the nature of the business, industry, or operation. There are a number of methods that water systems can use to work cooperatively with potential sources of contamination, including educational visits and inspections of stored materials. Many owners of such facilities may not even be aware that they are located near a public water supply well.

Contaminant Source Inventory Process

A two-phased contaminant inventory of the study area was conducted in October 2001. The first phase involved identifying and documenting potential contaminant sources within the IBP Inc Source Water Assessment Areas (Figures 2, 3, and 4) through the use of computer databases and Geographic Information System maps developed by DEQ. The second, or enhanced, phase of the contaminant inventory involved contacting the operator to identify and add any additional potential sources in the area.

The delineated source water areas only contain wastewater land application sites and an above ground storage tank related to the IBP, Inc. business. Additionally, IBP, Inc. has areas near the Well #1 West and Well #2 East that are regulated by the Superfund Amendments and Reauthorization Act (SARA). Additionally, the wells are within 400 to 800 feet of South Cole Road. Though not considered a major transportation corridor, a spill occurring on this road could contribute all classes of contamination to the aquifer.

Table 1. IBP Inc Well #1 West, Potential Contaminant Inventory

SITE #	Source Description[1]	TOT Zone[2] (years)	Source of Information	Potential Contaminants[3]
1	SARA Site	0-3	Database Search	IOC, Microbes
2	SARA Site	0-3	Database Search	IOC, VOC, SOC, Microbes
3	WLAP Site	0-3	Database Search	IOC, Microbes
4	WLAP Site	0-3	Database Search	IOC, Microbes
5	WLAP Site	3-6	Database Search	IOC
6	WLAP Site	6-10	Database Search	IOC

[1] SARA = Superfund Amendments and Reauthorization Act, WLAP = wastewater land application
[2] TOT = time-of-travel (in years) for a potential contaminant to reach the wellhead
[3] IOC = inorganic chemical, VOC = volatile organic chemical, SOC = synthetic organic chemical

Table 2. IBP Inc Well #2 East, Potential Contaminant Inventory

SITE #	Source Description[1]	TOT Zone[2] (years)	Source of Information	Potential Contaminants[3]
1	SARA Site	0-3	Database Search	IOC, VOC, SOC, Microbes
2	AST Site	0-3	Database Search	VOC, SOC
3	WLAP Site	0-3	Database Search	IOC, Microbes
4	WLAP Site	3-6	Database Search	IOC
5	WLAP Site	6-10	Database Search	IOC

[1] SARA = Superfund Amendments and Reauthorization Act, WLAP = wastewater land application, AST = aboveground storage tank
[2] TOT = time-of-travel (in years) for a potential contaminant to reach the wellhead
[3] IOC = inorganic chemical, VOC = volatile organic chemical, SOC = synthetic organic chemical

Figure 2. IBP Inc. Delineation Map and Potential Contaminant Source Locations

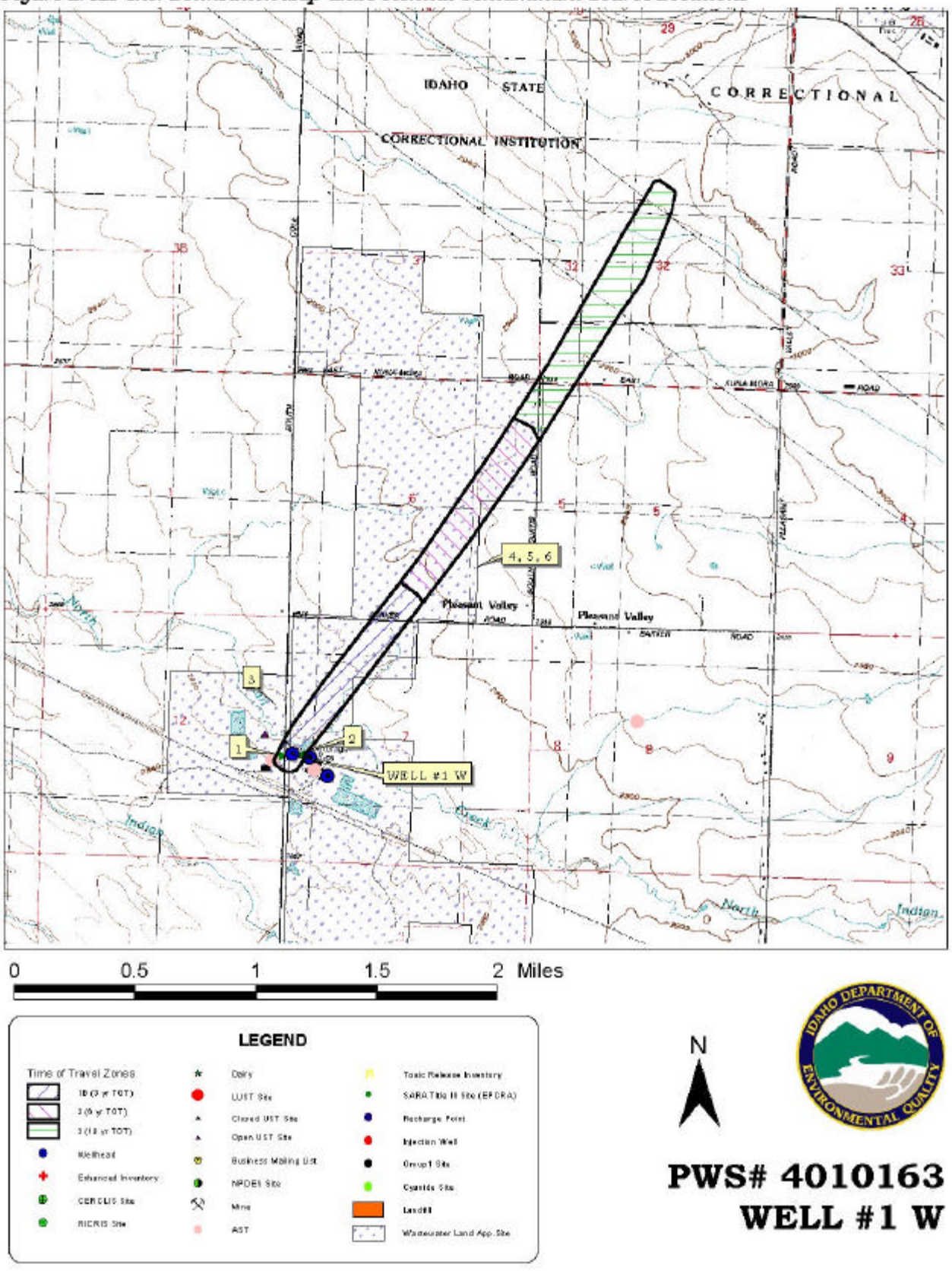


Figure 3. IBP Inc. Delineation Map and Potential Contaminant Source Locations

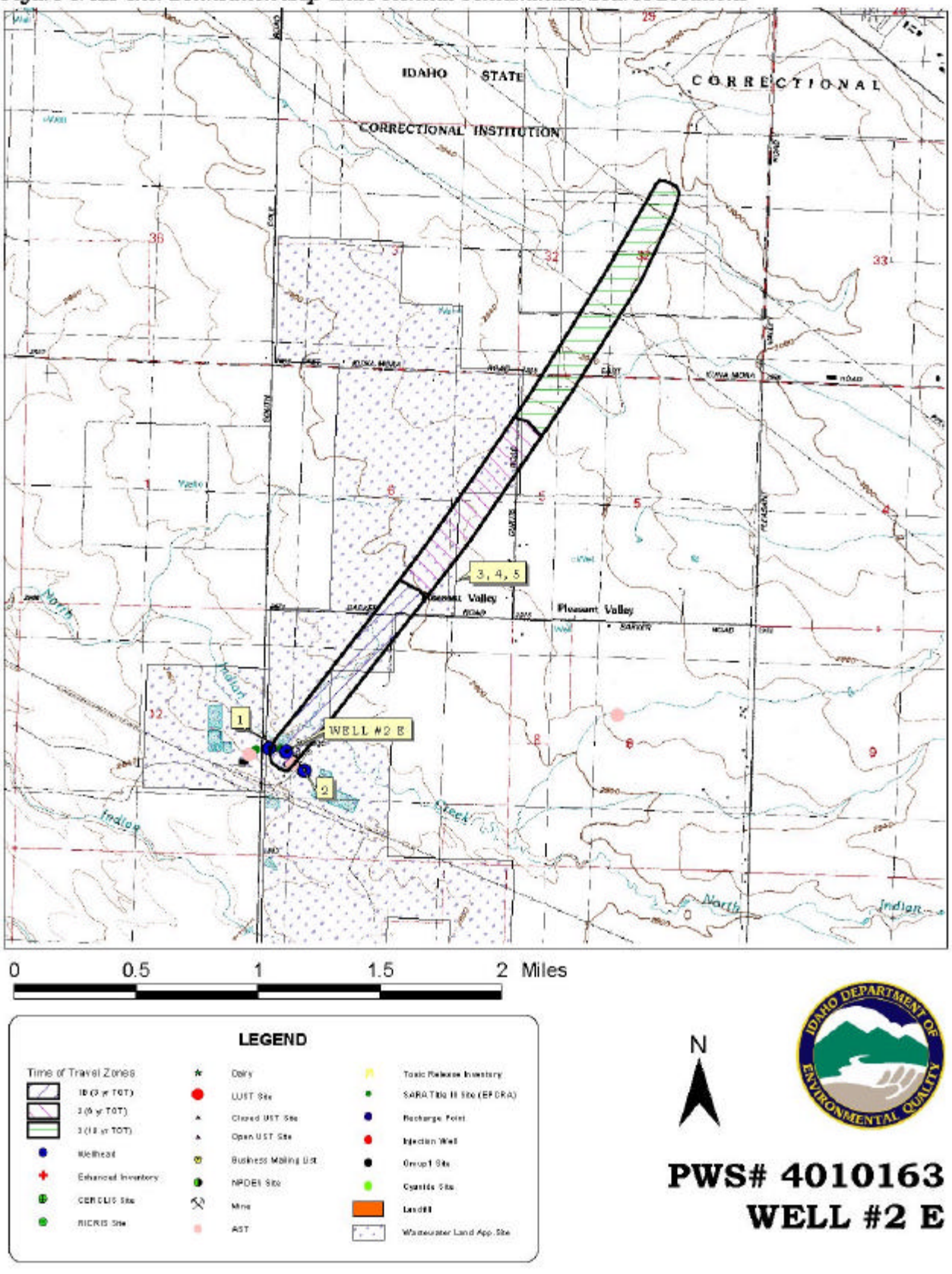


Figure 4. IBP Inc. Delineation Map and Potential Contaminant Source Locations

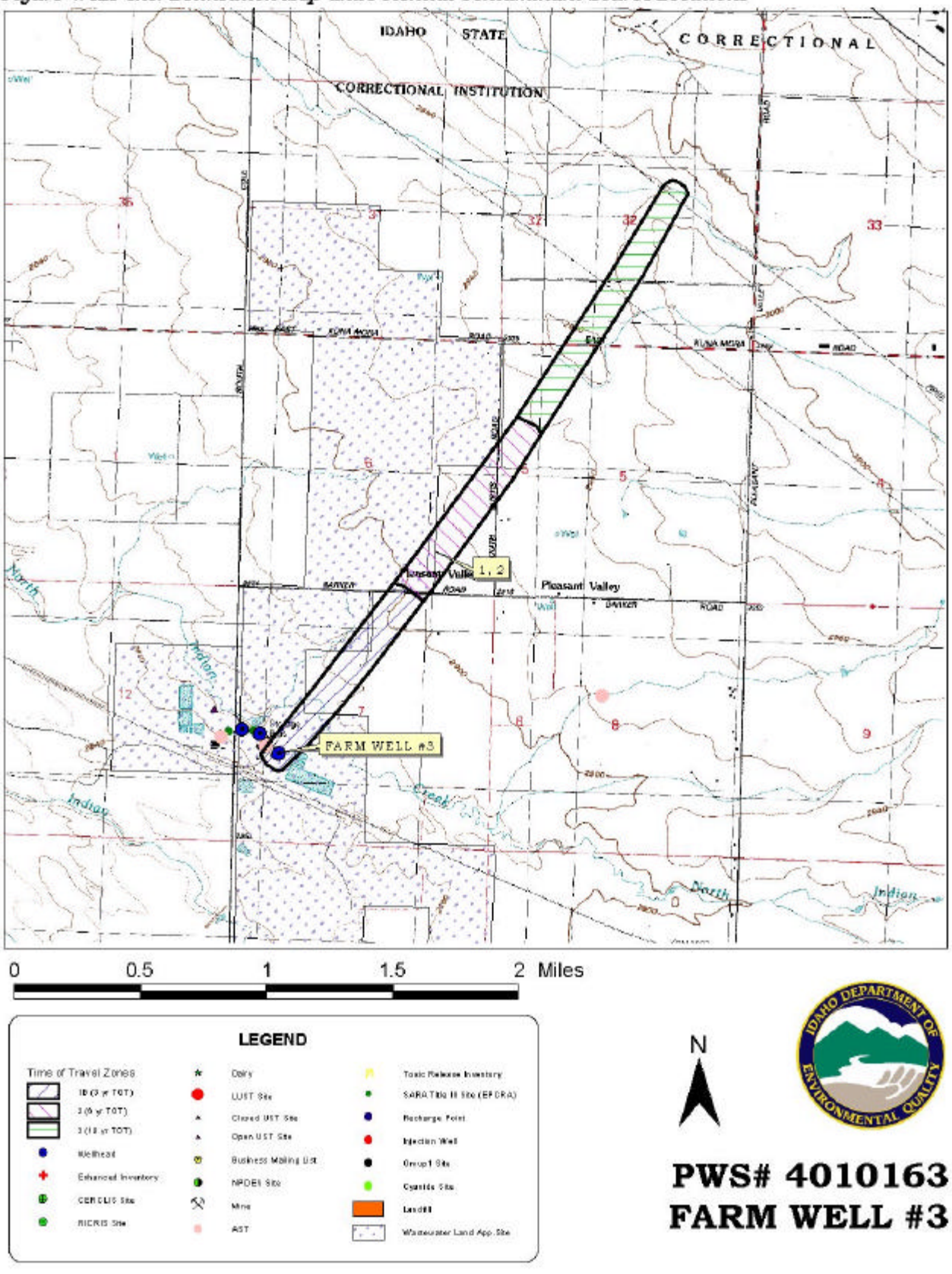


Table 3. IBP Inc Well #3 Farm, Potential Contaminant Inventory

SITE #	Source Description[1]	TOT Zone[2] (years)	Source of Information	Potential Contaminants[3]
1	WLAP Site	0-3	Database Search	IOC, Microbes
2	WLAP Site	3-6	Database Search	IOC

[1] WLAP = wastewater land application,
[2] TOT = time-of-travel (in years) for a potential contaminant to reach the wellhead
[3] IOC = inorganic chemical, VOC = volatile organic chemical, SOC = synthetic organic chemical

Section 3. Susceptibility Analyses

Each well's susceptibility to contamination was ranked as high, moderate, or low risk according to the following considerations: hydrologic characteristics, physical integrity of the well, land use characteristics, and potentially significant contaminant sources. The susceptibility rankings are specific to a particular potential contaminant or category of contaminants. Therefore, a high susceptibility rating relative to one potential contaminant does not mean that the well is at the same risk for all other potential contaminants. The relative ranking that is derived for each well is a qualitative, screening-level step that, in many cases, uses generalized assumptions and best professional judgement. Attachment A contains the susceptibility analysis worksheets. The following summaries describe the rationale for the susceptibility ranking.

Hydrologic Sensitivity

The hydrologic sensitivity rating of a well is dependent upon four factors: the surface soil composition, the material in the vadose zone (between the land surface and the water table), the depth to first ground water, and the presence of a 50-foot thick fine-grained zone above the producing zone of the well. Slowly draining soils such as silt and clay typically are more protective of ground water than coarse-grained soils such as sand and gravel. Similarly, fine-grained sediments in the subsurface and a water depth of more than 300 feet protect the ground water from contamination.

Hydrologic sensitivity is high for Wells #1 West and #3 Farm (Table 4). The soils are moderate to well-drained and the vadose zone is composed of gravel and fractured basalt. The water table is at about 260 feet below ground surface (bgs). No well log was available for Well #1 West, but the Well #3 Farm well shows that there are not 50 cumulative feet of low permeability geologic layers available for possibly reducing downward flow of contaminants.

Hydrologic sensitivity is moderate for Well #2 East. The Well #2 East well log indicates three distinct clay layers between 225 and 360 feet bgs totaling about 50 feet in thickness.

Well Construction

Well construction directly affects the ability of the well to protect the aquifer from contaminants. System construction scores are reduced when information shows that potential contaminants will have a more difficult time reaching the intake of the well. Lower scores imply a system is less vulnerable to contamination. For example, if the well casing and annular seal both extend into a low permeability unit, then the possibility of contamination is reduced and the system construction score goes down. If the highest production interval is more than 100 feet below the water table, then the system is

considered to have better buffering capacity. If the wellhead and surface seal are maintained to standards, as outlined in Sanitary Surveys, then contamination down the well bore is less likely. If the well is protected from surface flooding and is outside the 100-year floodplain, then contamination from surface events is reduced.

A sanitary survey was conducted in 1999 and showed that each of the wells had adequate well seals and were protected from surface flooding. This information, alone, placed each system construction category in the moderate category. The sanitary survey (IDHW, 1999) indicates that Well #1 West was drilled in 1974 and Well #2 East was drilled in 1972. IBP Inc submitted a well log for a well drilled in 1974, but identified the log as belonging to Well #2 East. Additional sanitary survey information confirms that the log matches Well #1 West. Submission of the correct well log for Well #2 East could reduce the system construction score.

Well #1 West has a moderate system construction score. The well, drilled in 1974, has 0.375-inch thick, 16-inch casing to 362 feet bgs and 0.330-inch thick, 10-inch casing to 448 feet bgs into "sticky brown clay." The annular seal is set to 18 feet bgs into basalt. These materials are assessed to be low permeability. The production zones are greater than 100 feet below the static water table. The well is screened from 360 to 370 feet bgs, 380 to 390 feet bgs, and 407 to 438 feet bgs.

Well #2 East has a moderate system construction score. The well, drilled 1972, has no available well log to determine placement of casing and annular seal. The well is 340 feet deep with screens beginning at 290 feet bgs. The surface seal was placed to 23 feet bgs.

Well #3 Farm has a moderate system construction score. The well, drilled in April 1987, has 0.250-inch thick, 20-inch casing to 13 feet bgs into "solid basalt lava" and 16-inch casing to 495 feet bgs. The annular seal is placed to 13 feet bgs into "solid basalt lava." There is over 200 feet of additional basalt and the total depth of the well is 498 feet. An 8.5-hour step drawdown pump test was conducted to determine safe sustained yield. Static water level is at 271 feet bgs. The perforated intervals are from 390 feet bgs to 410 feet bgs, 415 feet bgs to 445 feet bgs, and 460 feet bgs to 470 feet bgs. The production zone is greater than 100 feet below the static water table.

The available well logs for Well #1 West and Well #3 Farm allowed for determinations as to whether current public water system (PWS) construction standards are being met. For Well #2 East, the assessment could not be completed. Though the wells may have been in compliance with standards when they were completed, current PWS well construction standards are more stringent. The Idaho Department of Water Resources *Well Construction Standards Rules* (1993) require all PWSs to follow DEQ standards as well. IDAPA 58.01.08.550 requires that PWSs follow the *Recommended Standards for Water Works* (1997) during construction. Some of the regulations deal with screening requirements, aquifer pump tests, and thickness of casing. Table 1 of the *Recommended Standards for Water Works* (1997) lists the required steel casing thickness for various diameter wells. Ten-inch casing requires 0.365-inch thick casing, and 12-inch and larger casing requires a casing thickness of at least 0.375-inches. Both wells use too thin of a casing material. Casing thickness could not be fully assessed for Well #2 East. Therefore, all the wells were assessed an additional point in the system construction rating.

Potential Contaminant Source and Land Use

The three wells rate moderate for IOCs (i.e. nitrates, arsenic), and low for VOCs (i.e. petroleum products), SOCs (i.e. pesticides), and microbial contaminants (i.e. bacteria). The wastewater land application sites account for the largest contribution of points to the potential contaminant inventory ratings. A lack of other agricultural land uses is the main reason for the lower scores.

Final Susceptibility Ranking

A detection above a drinking water standard MCL, any detection of a VOC or SOC, or a detection of total coliform bacteria or fecal coliform bacteria at the wellhead will automatically give a high susceptibility rating to a well despite the land use of the area because a pathway for contamination already exists. Additionally, storing potential contaminant sources within 50 feet of a wellhead will automatically lead to a high susceptibility rating. In this case, Well #1 West and Well #2 East automatically rated high for SOCs because of a September 1993 detection of dinoseb. Additionally, Well #2 East automatically rated high for microbial contamination because of repeat detections of total coliform bacteria in September 1993 and July 1996. Hydrologic sensitivity and system construction scores are heavily weighted in the final scores. Having multiple potential contaminant sources in the 0- to 3-year time of travel zone (Zone 1B) and agricultural land contribute greatly to the overall ranking. In terms of total susceptibility, Well #1 West rates moderate for all categories, except as noted above. Well #2 East rates high for IOCs and moderate for VOCs. Well #3 Farm rates moderate for all classes of contamination.

Table 4. Summary of IBP Inc Susceptibility Evaluation

Well	Susceptibility Scores[1]									
	Hydrologic Sensitivity	Contaminant Inventory				System Construction	Final Susceptibility Ranking			
		IOC	VOC	SOC	Microbials		IOC	VOC	SOC	Microbials
Well #1 West	L	M	L	L	L	M	M	M	H*[2]	M
Well #2 East	H	M	L	L	L	M	H	M	H*	H*
Well #3 Farm	H	M	L	L	L	M	M	M	M	M

[1]H = High Susceptibility, M = Moderate Susceptibility, L = Low Susceptibility, IOC = inorganic chemical, VOC = volatile organic chemical, SOC = synthetic organic chemical

2H* = Wells #1 and #2 automatically scored high due to detection of SOC dinoseb and Well #2 automatically scored high due to total coliform bacteria.

Susceptibility Summary

Well #1 West rates moderate for all categories, except for an automatic high rating for SOCs. Well #2 East rates high for IOCs, automatically high for SOCs and microbial contamination, and moderate for VOCs. Well #3 Farm rates moderate for all classes of contaminants. The differences in the ratings depend on the well log information obtained (high to low hydrologic sensitivity; moderate system construction) and the lack of potential contaminant sources.

Though there are no current significant water chemistry problems in the ground water, there have been detections in the tested well water of the IOCs fluoride, barium, selenium, and nitrate at levels below the current MCLs. Total coliform bacteria were detected in Well #2 East in September 1993 and July 1996. The SOC dinoseb was detected in the manifold of Wells #1 West and #2 East in September 1993. No VOCs have been detected in the well water.

Section 4. Options for Drinking Water Protection

The susceptibility assessment should be used as a basis for determining appropriate new protection measures or re-evaluating existing protection efforts. No matter what the susceptibility ranking a source receives, protection is always important. Whether the source is currently located in a "pristine" area or an area with numerous industrial and/or agricultural land uses that require surveillance, the way to ensure good water quality in the future is to act now to protect valuable water supply resources.

An effective drinking water protection program is tailored to the particular local drinking water protection area. A community with a fully developed source water protection program will incorporate many strategies. For IBP Inc, drinking water protection activities should first focus on maintaining the wellhead protection practices indicated as being well kept outlined in the most recent sanitary survey (IDHW, 1999). Additionally, there should be a focus on implementation of practices aimed at reducing the leaching of chemicals from the wastewater land application sites within the designated source water areas. Application of herbicides, pesticides, or other chemicals are not allowed within 50 feet of any public water well (IDAPA 58.01.08.550). Much of the designated protection areas are outside the direct jurisdiction of IBP Inc, making collaboration and partnerships with state and local agencies and industry groups critical to the success of drinking water protection. All wells should maintain sanitary standards regarding wellhead protection. Should microbial contamination become a problem, appropriate disinfection practices would need to be implemented.

Due to the time involved with the movement of ground water, drinking water protection activities should be aimed at long-term management strategies even though these strategies may not yield results in the near term. A strong public education program should be a primary focus of any drinking water protection plan as the delineations contain some urban and residential land uses. Public education topics could include proper lawn and garden care practices, household hazardous waste disposal methods, proper care and maintenance of septic systems, and the importance of water conservation to name but a few. There are multiple resources available to help communities implement protection programs, including the Drinking Water Academy of the EPA. Drinking water protection activities for agriculture should be coordinated with the Idaho State Department of Agriculture, the Soil Conservation Commission, the Ada Soil Conservation District, and the Natural Resources Conservation Service.

A community must incorporate a variety of strategies in order to develop a comprehensive drinking water protection plan, be they regulatory in nature (i.e. zoning, permitting) or non-regulatory in nature (i.e. good housekeeping, public education, specific best management practices). For assistance in developing protection strategies please contact the Boise Regional Office of the DEQ or the Idaho Rural Water Association.

Assistance

Public water supplies and others may call the following DEQ offices with questions about this assessment and to request assistance with developing and implementing a local protection plan. In addition, draft protection plans may be submitted to the DEQ office for preliminary review and comments.

Boise Regional DEQ Office (208) 373-0550

State DEQ Office (208) 373-0502

Website: http://www2.state.id.us/deq

Water suppliers serving fewer than 10,000 persons may contact John Bokor, Idaho Rural Water Association, at 1-800-962-3257 for assistance with drinking water protection (formerly wellhead protection) strategies.

POTENTIAL CONTAMINANT INVENTORY
LIST OF ACRONYMS AND DEFINITIONS

AST (Aboveground Storage Tanks) – Sites with aboveground storage tanks.

Business Mailing List – This list contains potential contaminant sites identified through a yellow pages database search of standard industry codes (SIC).

CERCLIS – This includes sites considered for listing under the **Comprehensive Environmental Response Compensation and Liability Act (CERCLA)**. CERCLA, more commonly known as ASuperfund≅ is designed to clean up hazardous waste sites that are on the national priority list (NPL).

Cyanide Site – DEQ permitted and known historical sites/facilities using cyanide.

Dairy – Sites included in the primary contaminant source inventory represent those facilities regulated by Idaho State Department of Agriculture (ISDA) and may range from a few head to several thousand head of milking cows.

Deep Injection Well – Injection wells regulated under the Idaho Department of Water Resources generally for the disposal of stormwater runoff or agricultural field drainage.

Enhanced Inventory – Enhanced inventory locations are potential contaminant source sites added by the water system. These can include new sites not captured during the primary contaminant inventory, or corrected locations for sites not properly located during the primary contaminant inventory. Enhanced inventory sites can also include miscellaneous sites added by the Idaho Department of Environmental Quality (DEQ) during the primary contaminant inventory.

Floodplain – This is a coverage of the 100year floodplains.

Group 1 Sites – These are sites that show elevated levels of contaminants and are not within the priority one areas.

Inorganic Priority Area – Priority one areas where greater than 25% of the wells/springs show constituents higher than primary standards or other health standards.

Landfill – Areas of open and closed municipal and non-municipal landfills.

LUST (Leaking Underground Storage Tank) – Potential contaminant source sites associated with leaking underground storage tanks as regulated under RCRA.

Mines and Quarries – Mines and quarries permitted through the Idaho Department of Lands.)

Nitrate Priority Area – Area where greater than 25% of wells/springs show nitrate values above 5mg/l.

NPDES (National Pollutant Discharge Elimination System) – Sites with NPDES permits. The Clean Water Act requires that any discharge of a pollutant to waters of the United States from a point source must be authorized by an NPDES permit.

Organic Priority Areas – These are any areas where greater than 25 % of wells/springs show levels greater than 1% of the primary standard or other health standards.

Recharge Point – This includes active, proposed, and possible recharge sites on the Snake River Plain.

RICRIS – Site regulated under **Resource Conservation Recovery Act (RCRA)**. RCRA is commonly associated with the cradle to grave management approach for generation, storage, and disposal of hazardous wastes.

SARA Tier II (Superfund Amendments and Reauthorization Act Tier II Facilities) – These sites store certain types and amounts of hazardous materials and must be identified under the Community Right to Know Act.

Toxic Release Inventory (TRI) – The toxic release inventory list was developed as part of the Emergency Planning and Community Right to Know (Community Right to Know) Act passed in 1986. The Community Right to Know Act requires the reporting of any release of a chemical found on the TRI list.

UST (Underground Storage Tank) – Potential contaminant source sites associated with underground storage tanks regulated as regulated under RCRA.

Wastewater Land Applications Sites – These are areas where the land application of municipal or industrial wastewater is permitted by DEQ.

Wellheads – These are drinking water well locations regulated under the Safe Drinking Water Act. They are not treated as potential contaminant sources.

NOTE: Many of the potential contaminant sources were located using a geocoding program where mailing addresses are used to locate a facility. Field verification of potential contaminant sources is an important element of an enhanced inventory.

Where possible, a list of potential contaminant sites unable to be located with geocoding will be provided to water systems to determine if the potential contaminant sources are located within the source water assessment area.

References Cited

Great Lakes-Upper Mississippi River Board of State and Provincial Public Health and Environmental Managers, 1997. "Recommended Standards for Water Works."

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Attachment A

IBP Inc
Susceptibility Analysis
Worksheets

The final scores for the susceptibility analysis were determined using the following formulas:

1) VOC/SOC/IOC Final Score = Hydrologic Sensitivity + System Construction + (Potential Contaminant/Land Use x 0.2)

2) 2) Microbial Final Score = Hydrologic Sensitivity + System Construction + (Potential Contaminant/Land Use x 0.375)

Final Susceptibility Scoring:

0 - 5 Low Susceptibility

6 - 12 Moderate Susceptibility

≥ 13 High Susceptibility

Ground Water Susceptibility Report Public Water System Name : IBP INC Well# : WELL #1 W

Public Water System Number 4010163 01/24/2002 8:01:47 AM

1. System Construction		SCORE				
Drill Date	02/01/1974					
Driller Log Available	YES					
Sanitary Survey (if yes, indicate date of last survey)	YES	1999				
Well meets IDWR construction standards	NO	1				
Wellhead and surface seal maintained	YES	0				
Casing and annular seal extend to low permeability unit	YES	0				
Highest production 100 feet below static water level	YES	0				
Well located outside the 100 year flood plain	YES	0				
Total System Construction Score		1				
2. Hydrologic Sensitivity						
Soils are poorly to moderately drained	NO	2				
Vadose zone composed of gravel, fractured rock or unknown	YES	1				
Depth to first water > 300 feet	NO	1				
Aquitard present with > 50 feet cumulative thickness	YES	0				
Total Hydrologic Score		4				
3. Potential Contaminant / Land Use - ZONE 1A			IOC Score	VOC Score	SOC Score	Microbial Score
Land Use Zone 1A	URBAN/COMMERCIAL	2	2	2	2	
Farm chemical use high	NO	0	0	0		
IOC, VOC, SOC, or Microbial sources in Zone 1A	YES	NO	NO	YES	NO	
Total Potential Contaminant Source/Land Use Score - Zone 1A		2	2	2	2	
Potential Contaminant / Land Use - ZONE 1B						
Contaminant sources present (Number of Sources)	YES	4	1	1	4	
(Score = # Sources X 2) 8 Points Maximum		8	2	2	8	
Sources of Class II or III leacheable contaminants or	YES	4	0	0		
4 Points Maximum		4	0	0		
Zone 1B contains or intercepts a Group 1 Area	NO	0	0	0	0	
Land use Zone 1B	Less Than 25% Agricultural Land	0	0	0	0	
Total Potential Contaminant Source / Land Use Score - Zone 1B		12	2	2	8	
Potential Contaminant / Land Use - ZONE II						
Contaminant Sources Present	YES	2	0	0		
Sources of Class II or III leacheable contaminants or	YES	1	0	0		
Land Use Zone II	25 to 50% Irrigated Agricultural Land	1	1	1		
Potential Contaminant Source / Land Use Score - Zone II		4	1	1	0	
Potential Contaminant / Land Use - ZONE III						
Contaminant Source Present	YES	1	0	0		
Sources of Class II or III leacheable contaminants or	YES	1	0	0		
Is there irrigated agricultural lands that occupy > 50% of	NO	0	0	0		
Total Potential Contaminant Source / Land Use Score - Zone III		2	0	0	0	
Cumulative Potential Contaminant / Land Use Score		20	5	5	10	
4. Final Susceptibility Source Score		9	6	6	9	
5. Final Well Ranking		Moderate	Moderate	High*	Moderate	

Ground Water Susceptibility Report Public Water System Name : IBP INC Well# : WELL #2 E

Public Water System Number 4010163 01/24/2002 8:01:56 AM

1. System Construction		SCORE			
Drill Date	02/01/1974				
Driller Log Available	NO				
Sanitary Survey (if yes, indicate date of last survey)	YES	1999			
Well meets IDWR construction standards	NO	1			
Wellhead and surface seal maintained	YES	0			
Casing and annular seal extend to low permeability unit	NO	2			
Highest production 100 feet below static water level	NO	1			
Well located outside the 100 year flood plain	YES	0			
Total System Construction Score		4			
2. Hydrologic Sensitivity					
Soils are poorly to moderately drained	NO	2			
Vadose zone composed of gravel, fractured rock or unknown	YES	1			
Depth to first water > 300 feet	NO	1			
Aquitard present with > 50 feet cumulative thickness	NO	2			
Total Hydrologic Score		6			
3. Potential Contaminant / Land Use - ZONE 1A		IOC Score	VOC Score	SOC Score	Microbial Score
Land Use Zone 1A	URBAN/COMMERCIAL	2	2	2	2
Farm chemical use high	NO	0	0	0	
IOC, VOC, SOC, or Microbial sources in Zone 1A	YES	NO	NO	YES	YES
Total Potential Contaminant Source/Land Use Score - Zone 1A		2	2	2	2
Potential Contaminant / Land Use - ZONE 1B					
Contaminant sources present (Number of Sources)	YES	2	2	2	2
(Score = # Sources X 2) 8 Points Maximum		4	4	4	4
Sources of Class II or III leacheable contaminants or	YES	2	0	2	
4 Points Maximum		2	0	2	
Zone 1B contains or intercepts a Group 1 Area	NO	0	0	0	0
Land use Zone 1B	Less Than 25% Agricultural Land	0	0	0	0
Total Potential Contaminant Source / Land Use Score - Zone 1B		6	4	6	4
Potential Contaminant / Land Use - ZONE II					
Contaminant Sources Present	YES	2	0	0	
Sources of Class II or III leacheable contaminants or	YES	1	0	0	
Land Use Zone II	25 to 50% Irrigated Agricultural Land	1	1	1	
Potential Contaminant Source / Land Use Score - Zone II		4	1	1	0
Potential Contaminant / Land Use - ZONE III					
Contaminant Source Present	YES	1	0	0	
Sources of Class II or III leacheable contaminants or	YES	1	0	0	
Is there irrigated agricultural lands that occupy > 50% of	NO	0	0	0	
Total Potential Contaminant Source / Land Use Score - Zone III		2	0	0	0
Cumulative Potential Contaminant / Land Use Score		14	7	9	6
4. Final Susceptibility Source Score		13	11	12	12
5. Final Well Ranking		High	Moderate	High*	High*

Ground Water Susceptibility Report Public Water System Name : IBP INC Well# : FARM WELL #3

Public Water System Number 4010163 01/24/2002 7:16:04 AM

1. System Construction		SCORE				
Drill Date	04/17/1987					
Driller Log Available	YES					
Sanitary Survey (if yes, indicate date of last survey)	YES	1999				
Well meets IDWR construction standards	NO	1				
Wellhead and surface seal maintained	YES	0				
Casing and annular seal extend to low permeability unit	NO	2				
Highest production 100 feet below static water level	YES	0				
Well located outside the 100 year flood plain	YES	0				
Total System Construction Score		3				
2. Hydrologic Sensitivity						
Soils are poorly to moderately drained	NO	2				
Vadose zone composed of gravel, fractured rock or unknown	YES	1				
Depth to first water > 300 feet	NO	1				
Aquitard present with > 50 feet cumulative thickness	NO	2				
Total Hydrologic Score		6				
3. Potential Contaminant / Land Use - ZONE 1A			IOC Score	VOC Score	SOC Score	Microbial Score
Land Use Zone 1A	URBAN/COMMERCIAL		2	2	2	2
Farm chemical use high	NO		0	0	0	
IOC, VOC, SOC, or Microbial sources in Zone 1A	NO		NO	NO	NO	NO
Total Potential Contaminant Source/Land Use Score - Zone 1A			2	2	2	2
Potential Contaminant / Land Use - ZONE 1B						
Contaminant sources present (Number of Sources)	YES		1	0	0	1
(Score = # Sources X 2) 8 Points Maximum			2	0	0	2
Sources of Class II or III leacheable contaminants or	YES		3	0	0	
4 Points Maximum			3	0	0	
Zone 1B contains or intercepts a Group 1 Area	NO		0	0	0	0
Land use Zone 1B	25 to 50% Irrigated Agricultural Land		2	2	2	2
Total Potential Contaminant Source / Land Use Score - Zone 1B			7	2	2	4
Potential Contaminant / Land Use - ZONE II						
Contaminant Sources Present	YES		2	0	0	
Sources of Class II or III leacheable contaminants or	YES		1	0	0	
Land Use Zone II	25 to 50% Irrigated Agricultural Land		1	1	1	
Potential Contaminant Source / Land Use Score - Zone II			4	1	1	0
Potential Contaminant / Land Use - ZONE III						
Contaminant Source Present	NO		0	0	0	
Sources of Class II or III leacheable contaminants or	NO		0	0	0	
Is there irrigated agricultural lands that occupy > 50% of	NO		0	0	0	
Total Potential Contaminant Source / Land Use Score - Zone III			0	0	0	0
Cumulative Potential Contaminant / Land Use Score			13	5	5	6
4. Final Susceptibility Source Score			12	10	10	11
5. Final Well Ranking			Moderate	Moderate	Moderate	Moderate